

Agency: Commerce, Community and Economic Development**Grant Recipient: Homer Electric Association, Inc.****Federal Tax ID: 92-0014079****Project Title:****Project Type:** Remodel, Reconstruction and Upgrades

AEA - Homer Electric Association Soldotna to Nikiski Transmission Upgrade

State Funding Requested: \$25,000,000
One-Time Need

House District: 33 / Q**Brief Project Description:**

The proposed upgrade of the existing 69 kV system to 115 kV would enable the Nikiski power generation facilities dual access to the Railbelt transmission grid, maintaining the current level of availability to export renewable Bradley Lake hydro power. This system upgrade will also improve the level of service and reliability to the City of Kenai and three of the State's largest industrial plants (Tesoro refinery, ConocoPhillips LNG facility, and Chevron's Swanson River oil and gas field).

Funding Plan:

Total Project Cost:	\$25,000,000
Funding Already Secured:	(\$0)
FY2012 State Funding Request:	<u>(\$25,000,000)</u>
Project Deficit:	\$0

Funding Details:

Total cost of the project is \$25 million. HEA to date has spent \$2.52 million on this project and the additional State appropriation is needed to complete the work

Detailed Project Description and Justification:

This project will benefit HEA as well as the entire Railbelt system by insuring access to renewable energy produced at the State's Bradley Lake Hydroelectric Project.

Currently a significant portion of the output of the Bradley Lake Project flows across HEA's transmission system enroute to the rest of the Railbelt via a radial (single) transmission line that traverses from Soldotna to Anchorage via Turnagain Arm.

Although the 140 mile transmission line between Soldotna and Anchorage was appropriately sized several decades ago, the construction of the Bradley Lake Project has greatly increased the original performance expectations. The ability of Bradley Lake power to flow off the Peninsula has been very good, particularly since HEA's 40 MW Frame VI combustion turbine was placed "on-line" in 2001. The Frame VI turbine adds "inertia" to the system which helps keep the transmission grid stable, something very difficult to do on a long radial transmission line. The Frame VI also improves the level of availability of renewable Bradley power.

Recently plans have been made by HEA to construct additional natural gas fired generation on the Kenai Peninsula. The decision to add new generation was based on several factors including access to key natural gas fuel supply infrastructure and the ability to increase the efficiency of HEA's existing 40 MW combustion turbine (located adjacent to Agrium) by roughly 45% through the installation of a steam turbine. Also, the new generation will increase the amount "inertia" on the grid resulting in an increased stabilizing affect on the system. With the addition of HEA's new steam turbine and the potential increased output of Bradley Lake if the Battle Creek diversion project comes to fruition, the level of availability of

the Bradley Lake renewable power is expected to decline as attempts to get more power transmitted off the Peninsula increase.

There are several potential solutions to improving the capabilities of the transmission system, but in all cases, keeping the southern grid stable while exporting power is highly dependent on keeping high inertia generation connected on the Kenai. Currently, high inertia generation assets in Nikiski (HEA's existing 40 MW facility soon to be a 77 MW facility and Chugach's 67 MW Bernice Lake facility) are connected to the Railbelt transmission system through a single 115 kV transmission line between Nikiski and Soldotna.

Maintenance on the 115 kV system or unscheduled outages (equipment failures, trees, etc.) requires the Nikiski based generation units to be shut down and replaced by power from lower inertia generation which will greatly reduce the ability to export Bradley power. This shut down not only impacts the ability to get Bradley Lake produced energy off the Peninsula, but impacts electric service to some of the State's largest industrial customers (Tesoro refinery, ConocoPhillips LNG facility, and Chevron's Swanson River oil and gas field).

The proposed upgrade of the existing 69 kV system to 115 kV between Nikiski and Soldotna, an improvement also recommended in AEA's recent Railbelt Integrated Resource Plan, would enable the Nikiski generation and industrial facilities dual access to the Railbelt transmission grid thereby maintaining the current level of availability to Bradley Lake power.

The project has been discussed with the other Railbelt electric utilities and several large industrial customers in the project area. Because the project will be an upgrade on existing facilities, community impact is minimal.

Project Timeline:

2012-2013

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

Homer Electric Associaton

Grant Recipient Contact Information:

Name:	Bradley P. Janorschke
Title:	General Manager, HEA
Address:	280 Airport Way Kenai, Alaska 99611
Phone Number:	(907)283-2312
Email:	bjanorschke@homerelectric.com

Has this project been through a public review process at the local level and is it a community priority? ☒ Yes ☐ No



"Village with a Past, City with a Future"

210 Fidalgo Avenue, Kenai, Alaska 99611-7794
Telephone: (907) 283-7535 / FAX: (907) 283-3014
www.ci.kenai.ak.us

January 27, 2011

To whom it may concern:

The City of Kenai fully supports Homer Electric Association's project to upgrade the 69 kV transmission line between Nikiski and Soldotna to a 115 kV line.

Currently, the City of Kenai is served by two substations that are connected to the transmission line that is being upgraded. The successful completion of this project will result in dual 115 kV transmission lines between Nikiski and Soldotna. The end result of the project will be improved reliability for the City of Kenai in the event a problem occurs on one of the transmission lines.

The City of Kenai has seen a surge of economic activity in recent years. Companies such as Home Depot, Lowes, and Wal Mart have all chosen to locate their business here in Kenai. As we continue to actively market our town, it is imperative that we are able to assure prospective businesses that there will continue to be a reliable source of power available in the community.

An interruption of power creates a series of very expensive problems for local businesses and any steps HEA can take to improve reliability is supported by the City of Kenai. Thank you for considering this request.

Sincerely,

CITY OF KENAI

Rick Koch,

City Manager



Kevin A. Tabler, Manager
Land/Governmental Affairs
MidContinent/Alaska BU

Union Oil Company of California
3800 Centerpoint Dr., Suite 100
Anchorage, AK 99503
Tel 907 263 7600
Fax 907 263 7698
Email tablerk@chevron.com

January 25, 2011

To whom it may concern:

Homer Electric Association's request for funding to upgrade the transmission line between Nikiski and Soldotna has the full support of Union Oil Company of California (Union Oil).

As the owner and operator of the Swanson River Oil Field on the Kenai Peninsula, Union Oil is fully aware of the importance of a reliable source of power. Union Oil has recently installed large electric pumps in the Swanson Field. Any interruption of power creates a series of very expensive problems for these new pumps and it is our goal to work with Homer Electric to devise a system that can provide the best service possible.

The construction of a dual 115kV line will provide much needed redundancy in the system and allow Union Oil to continue producing oil in the Swanson River Oil Field in the most efficient way possible.

The Swanson River Oil Field has been producing oil and providing jobs for Alaska residents since 1961. Union Oil is working hard to continue that legacy and secure a bright future for the Swanson River field. Homer Electric's proposal to upgrade the transmission line between Nikiski and Soldotna will help us move in that direction.

While we are most concerned about our needs at Swanson River, this project will also benefit the entire Railbelt and have a positive impact on the transmission line to Anchorage.

Thank you for considering this request.

Sincerely,

A handwritten signature in blue ink that reads "Kevin A. Tabler".

Kevin A. Tabler



Tesoro Alaska Company
P.O. Box 3369
Kenai, Alaska 99611-3369
907 776 8191
907 776 5546 Fax

January 24, 2011

To whom it may concern:

Tesoro Alaska Company fully supports Homer Electric Association's request for funding to upgrade the transmission line between Nikiski and Soldotna. The importance of having a dual 115 kV system in place cannot be overstated from Tesoro's point of view.

The Tesoro refinery is a complex industrial facility and it is of paramount importance that there is a reliable source of power available at all times. The current situation leaves the refinery and other industrial facilities in the Nikiski area at risk should there be a problem on the single 115kV line currently serving the Tesoro plant.

This important upgrade will not only improve reliability for the State's largest refinery, but it will also benefit the entire Railbelt by improving stability on the existing transmission line that connects Soldotna to Anchorage.

Tesoro Alaska appreciates your consideration of this request.

Sincerely,

Stephen W. Hansen
Vice President, Kenai Refinery
Tesoro Alaska Company



BERNICE LAKE
PHILLIPS
NIKISKI

TESORO

69 kV lines in these corridors will be upgraded to 115 kV

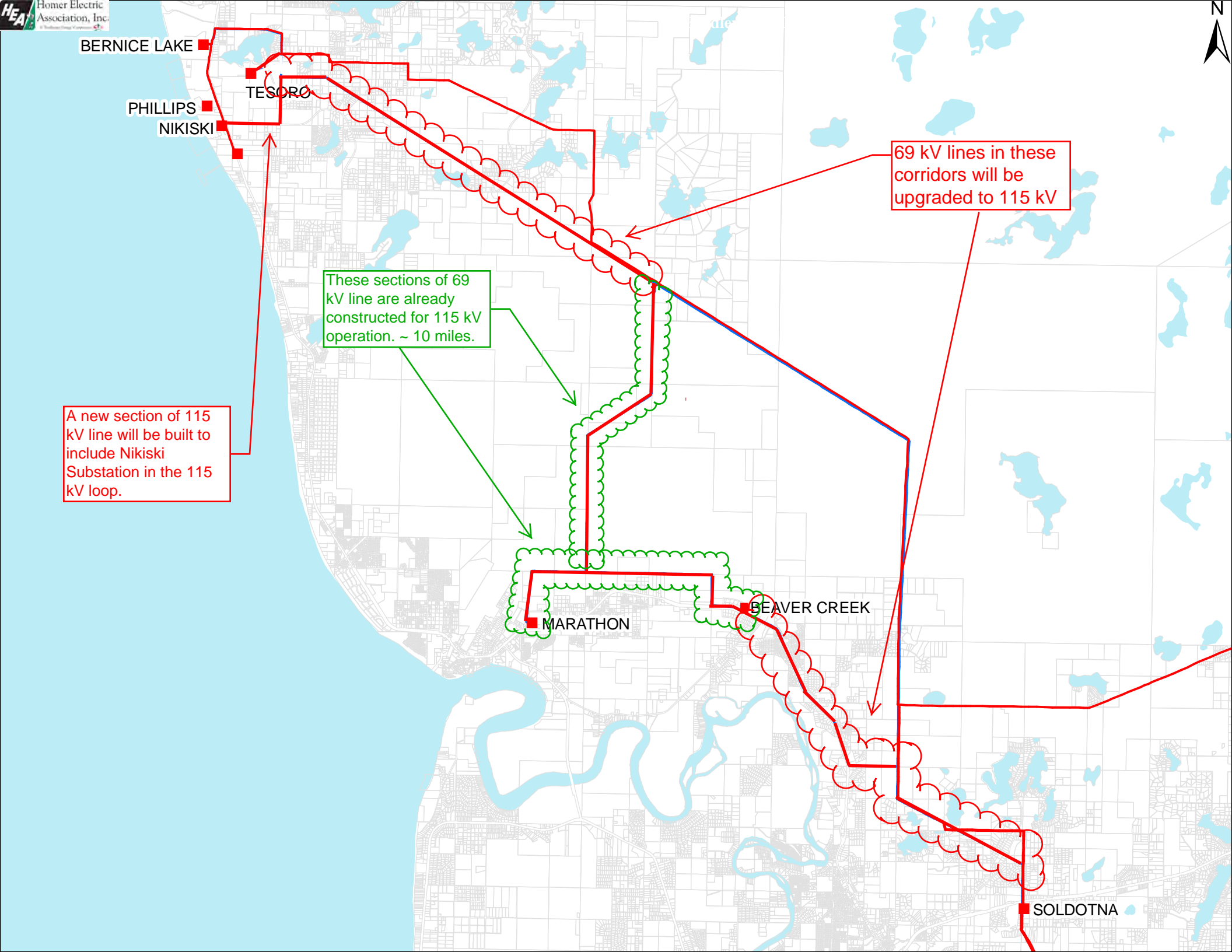
These sections of 69 kV line are already constructed for 115 kV operation. ~ 10 miles.

A new section of 115 kV line will be built to include Nikiski Substation in the 115 kV loop.

MARATHON

BEAVER CREEK

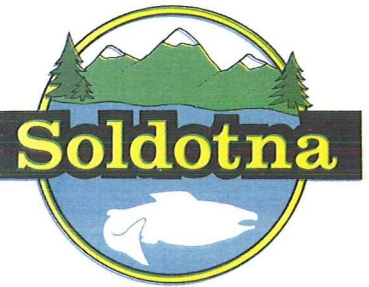
SOLDOTNA



City of Soldotna

177 North Birch • Soldotna Alaska 99669 • Phone (907) 262-9107

Office of the Mayor



Date: January 5, 2011

To whom it may concern:

I am writing to express strong support for Homer Electric Association's project to upgrade the 69 kV transmission line between Nikiski and Soldotna to a 115 kV line.

As Mayor of Soldotna, I have made it a priority to support existing and attract new businesses to our community. The issue of electric service reliability is one of the first questions raised by companies interested in locating businesses in our community. We are fortunate to be able to demonstrate that Homer Electric provides an excellent level of service reliability.

Yet, the key to reliable infrastructure includes a consistent level of maintenance and upgrading to new technology and greater reliability. In the case of Soldotna's service from HEA, it is clear that in order to maintain and improve that reliability, the transmission line between Soldotna and Nikiski requires upgrading from the 69 kV service.

The successful completion of this project will result in dual 115 kV transmission lines between Nikiski and Soldotna. The end result of the project will be improved reliability for the City of Soldotna in the event a problem occurs on one of the transmission lines.

Economic development is critically important to the City of Soldotna. We have been very successful in achieving a unique blend of quality residential developments, small, local businesses and larger retail facilities in our city. Regardless of the size of a home or business, it is important that they all have access to reliable and affordable power. Homer Electric should be commended for seeking to upgrade and improve the overall level of reliability. As the Mayor of the City of Soldotna, I want to state that the project that has our full support.

Thank you for considering this request.

Sincerely,

A handwritten signature in blue ink, appearing to read "P. A. Micciche", is written over the word "Sincerely,".

Mayor Peter A. Micciche

City of Soldotna, Alaska